USDA United States Department of Agriculture | Forest Service | Northeastern Area State and Private Forestry | 180 Canfield Street Morgantown, WV 26505- 3101

File 3400 **Date:13th** **December 2001**
Route To: Bob White ANF

Subject: ANF Monitoring Report

To: Bob White

Information for consideration of possible inclusion in the ANF Monitoring reports:
of FY 99.

Dogwood Anthracnose. In the spring of 1998, in the area of Jamison Run, the hillsides were dappled with brilliant splashes of white, the flowering Dogwoods were in full display. This display gave no hint that in many parts of the country the dogwood anthracnose fungus has decimated this most beautiful member of the forest understory. Dogwood Anthracnose monitoring plots established in the summer of FY98. The plots were established in an old tornado swath in the Jamison Run area of the forest. Observations in the spring of 1999 revealed that the dogwoods were flowering as brilliantly as in previous years. While the anthracnose fungus is having no detectable impact upon the trees, grape vines are. By mid summer the canopy of many trees was being weighed down by smothering grape vines. These are grape vines that once hanging in the canopy of the overstory. An overstory that was broken by an earlier tornado. The resprouting grape vines climbed up and have begun to smother the only trees they could find: the surviving dogwoods.

BBD. Two replicates of the BBD silviculural guidelines were initially established. As the two plots were established a year apart, they were reassessed a year apart. The second replicate was assessed in the early summer of 1999. Initial analysis reveals, in both replicates, that following the BBD silvicultural guidelines reduces the number of striped maple trees in the resulting stands. And further these guidelines did not significantly reduce the presence of American Beech in the subsequent stand.

FH Monitoring Plots. A selective, and in-depth, resurvey of a sample the first set of FHM plots (established the previous year) was made by a pathologist and an entomologist from the Morgantown Field Office of S & PF. Their assessment was that the field crews had done a remarkably good job the previous year and that the collected data accurately reflected the conditions of the plot trees.

Information for consideration of possible inclusion in the ANF Monitoring reports:
of FY 00.

BBD. After the discovery of the BBD scale in two counties in Michigan three, pathologists and an entomologist flew down to the ANF to gather information on this disease. They reviewed the impact that BBD has had on the ANF and plan to use the insight that the ANF silviculturists provided in developing silvicultural systems for Michigan.

Nectria. The fungal component of the disease, *Nectria,* has not yet been found in MI. Surprisingly, the once ubiquitous, Nectria could not be found on the ANF either. Dr. David

Lonsdale, a visiting British researcher, an expert on this fungus suggested that the hyperparasite might be having an impact upon the fruiting of *Nectria*. Evaluating this aspect of BBD is a high priority item for FHP (of Morgantown) FY01 plan of work.

The BBD map. The distribution of the BBD scale was remapped in 2000. Today, the scale is essentially distributed over all of the forest. The probability of finding scale in a particular stand is related to the probability of finding a beech tree in the stand. That is not to say that all trees are infested, just that the more beech a stand contains the greater is the chance of detecting the scale. The level of scale infestations varied across the forest. In some locations the scale was extremely heavy and in others it was very light. There appeared to be no detectable pattern to the scale intensity. However, it is more likely that there is a pattern and that it is related to a complex interaction of local biological and environmental factors. The distribution of BBD on the ANF was last mapped in 1996. However, the failure to detect the Nectria fungus in 2000 made it impossible to map a Killing Front based upon the presence of the fungus. Yet in the summer of 2000 it was possible to observe dead and dying beech trees in many parts of the forest. Some of the mortality was occurring well behind the accepted killing front. Clearly the concept of a killing front sweeping across the forest and being defined by the presence of *Nectria* fruiting bodies need to be reevaluated. As beech trees can die, and may even be killed by Nectria without the fungus ever fruiting.

Information for consideration of possible inclusion in the ANF Monitoring reports: FY **01.**

BBD FY01 was a little over a month old when *Nectria* was detected fruiting on the ANF. As a consequence of failure to detect the *Nectria* fungus in FY00 it had been decided to re-establish the three, 100 tree BBD plots on the ANF. Their, well documented, history of *Nectria* provided a base for locating potential *Nectria* bearing trees. On the 14th of November *Nectria* was found on six trees in plot #1 and on no trees in the other two plots. Microscopic examination reveled that the spores were not fully mature. A week later the sample gathered on the 14th was releasing mature spores. Perhaps the reason for the failure to find Nectria in 2000 had more to do with the timing of the survey than with the presence of fungal hyperparacites.